Docket No. AT9-99-301 *PATENT*

#17
K Davis
11-24-03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Cooper et al.	§	
	§	Group Art Unit: 2622
Serial No. 09/434,765	§	
	§	Examiner: Sherrill, Jason L.
Filed: November 4, 1999	§	
	§	
For: Method for Enabling a Client to Specify the Characteristics of an Image to be Downloaded from a Server	§	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTENTION: Board of Patent Appeals and Interferences

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By: _____
Jeannine Vasquez

APPELLANT'S BRIEF (37 C.F.R. 1.192)

This brief is in furtherance of the Notice of Appeal, filed in this case on September 18, 2003.

The fees required under § 1.17(c), and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief is transmitted in triplicate. (37 C.F.R. 1.192(a)).

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REAL PARTIES IN INTEREST

The real party in interest in this appeal is the following party: International Business Machines Corporation.

RELATED APPEALS AND INTERFERENCES

With respect to other appeals or interference's that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal, there are no such appeals or interferences.

STATUS OF CLAIMS

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application are: 1-14 and 27-29.

B. STATUS OF ALL THE CLAIMS IN APPLICATION

1. Claims canceled: 15-26.
2. Claims withdrawn from consideration but not canceled: none.
3. Claims pending: 1-14 and 27-29.
4. Claims allowed: 8 and 9.
5. Claims rejected: 1-7, 10-14, and 27.
6. Claims objected to: 28 and 29.

C. CLAIMS ON APPEAL

The claims on appeal are: 1-7, 10-14, and 27.

STATUS OF AMENDMENTS

No amendments after final have been made.

SUMMARY OF INVENTION

The present invention allows a user at a client browser to specify bitmap format characteristics when requesting an image from a server. Specification, page 6 lines 6-9. In

response to this request, a version of the image is generated that meets the user's specification. Specification, page 17 line 21-page 18 line 8. This version of the image is returned to the client browser. Specification, page 18 lines 10-12.

ISSUES

The issues on appeal are whether:

(1) claims 1-5, 10-14, and 27 are properly rejected under 35 USC § 103(a) as being unpatentable over Hunt et al., United States patent no. 5,764,235, ("*Hunt*"); and

(2) claims 6 and 7 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hunt* as applied to claim 1 above and in further view of Lo et al., United States patent number 5,911,044, ("*Lo*").

GROUPING OF CLAIMS

The claims do not stand and fall together as a single group. Instead the claims stand an fall in two groups. Group A contains claims 1-5, 10-14, and 27 and group B contains claims 6 and 7.

ARGUMENT

I. 35 U.S.C. § 103(a), Obviousness, Claims 1-5, 10-14, and 27

The examiner has improperly rejected claims 1-5, 10-14 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Hunt et al., United States patent no. 5,764,235, ("*Hunt*"). In this particular case, the examiner has improperly interpreted *Hunt* as teaching or suggesting features in the presently claimed invention. In rejecting the claims, the examiner stated:

> For claim 1, Hunt discloses a method in a server (102, Fig. 1A) for serving an image from the server to a client (104, Fig. 1A), comprising the steps of: receiving a client request from the client (col. 2, lines 31-52), wherein the client request specifies a set of one or more bitmap characteristics for an image transfer (col. 11, line 65-col. 12, line 6), responsive to the client request, generating a version of an image for the image transfer that conforms to the set of specified bitmap characteristics; and serving the version of the image back to the client (col. 2 lines 47-52, col. 5, lines 7-32).
>
> Hunt fails to directly teach that at least one of the bitmap

characteristics includes a number of bits per pixel. However, Hunt discloses a method for serving an image from a server to a client in which image control information from the client is used by the server to determine the data size and image quality, determined format being suitable for storing, displaying or printing an image associated with the control information received (col. 3, lines 3-12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to consider that the control information sent by the client to the server for determining a format suitable for storing, displaying or printing an image as taught by Hunt would include specifying a bitmap characteristic such as the number of bits per pixel. Specifying the number of bits per pixel sets the color depth of the image, allowing the user to control image quality.

Office Action dated June 17, 2003, page 3-4.

The examiner bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). The examiner has failed to establish a *prima facie* case of obviousness based on the prior art, in rejecting these claims using *Hunt*. Specifically, the examiner has failed to consider all of the features of the presently claimed invention in rejecting the claims. In comparing *Hunt* to the presently claimed invention, the claim limitations of the presently claimed invention may not be ignored in an obviousness determination.

Claim 1 is a representative claim of the presently claimed invention and reads as follows:

1. A method in a server for serving an image from the server to a client, comprising the steps of:

receiving a client request from the client, wherein the client request specifies a set of one or more bitmap characteristics for an image transfer, at least one of the bitmap characteristic including a number of bits per pixel;

responsive to the client request, generating a version of the image for the image transfer that conforms to the set of specified bitmap characteristics; and

serving the version of the image back to the client.

The step of generating a version of the image that conforms to the set of specified bitmap characteristics in response to the client request does not appear to have been

considered by the examiner. The examiner has only stated that this feature is present. None of the cited sections cited by the examiner relate to such a feature. In fact, such a feature is not taught or suggested by this cited reference.

The mere fact that a prior art reference can be readily modified does not make the modification obvious, unless the prior art suggested the desirability of the modification. *In re Laskowski*, 871 F.2d 115, 10 U.S.P.Q.2d 1397 (Fed. Cir. 1989) and also *see In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992) and *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1993). The examiner may not merely state that the modification would have been obvious to one of ordinary skill in the art without pointing out in the prior art a suggestion of the desirability of the proposed modification. In this case, the examiner has failed to point out any teaching, suggestion, or incentive for the generating step of claim 1.

"It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art." *In re Hedges*, 228 U.S.P.Q. 685, 687 (Fed. Cir. 1986). When *Hunt* is considered as a whole by one of ordinary skill in the art, this cited reference teaches away from generating a version of the image in response to the client request. For example, *Hunt* teaches the following:

> As a computer-implemented method for transmitting a graphical image from a server machine to a client machine, an embodiment of the invention performs the operations of: receiving, at the server machine, a request for a graphical image from a client machine, the graphical image being stored on the server machine and having a predetermined total image size; obtaining image control information; determining an appropriate amount of data for the graphical image to be transmitted based on at least the image control information, the appropriate amount being less than or equal to the predetermined total image size; and transmitting the graphical image to the extent of the appropriate amount from the server machine to the client machine.
>
> As a computer-implemented method for transmitting a graphical image from a server machine to a client machine, another embodiment of the invention performs the operations of: receiving, at the server machine, a request for a graphical image from a client machine; negotiating between the server machine and the client machine to determine a quality-size tradeoff for the graphical image; and transmitting the graphical image to

the extent of the quality-size tradeoff from the server machine to the client machine.

Hunt, col. 2, lines 31-52. As can be seen, this portion of *Hunt* teaches that a predetermined total size for the graphical image is stored on the server in which data having an amount less than or equal to the predetermined total image size is transferred to transfer the graphical image to a client. This portion of *Hunt* specifically teaches that the image is generated before the request is received. A portion, or all, of the data for an image is sent in response to the request from the client. In contrast, the presently claimed invention specifically states that a version of the image is generated in response to the client request. *Hunt* does not generate a version of the image. Instead, *Hunt* sends portions of the data making up the image to the client.

In reality, *Hunt* is prior art recognized by the prior invention as a problem which is solved by the present invention. For example, the specification of the present invention teaches:

> Such a technique is described in U.S. Patent No. 5,764,235 to Hunt et al. In this patent, each of the client and server include a dedicated handshake process that allows the machines to first determine whether they both support the image customization functionality. If so, then the server may then use an image customization process on images to be transmitted to the client to selectively modify the amount of data and the format of the graphical image files to be sent to the client in response to a request for the image. In performing the image customization process, the server makes use of server image control data and/or client image control data. The client image control data is data or information obtained from the client that is useful in determining both the suitable amount of data and/or format for the graphical image files to be sent. Typically, such data includes user data and client system data. The user data may include user preference, intended use, or a specific quality level. The client system data includes type of compression supported, transmissions performance criteria, and equipment data (e.g., display format, printer format, or the like).
>
> While the technique illustrated in Hunt et al. reduce image transmission time and save network bandwidth, the approach has certain disadvantages. Foremost, the technique proposed by Hunt et al. envisions that a given graphical image file be processed prior to receipt of the client request. According to the patent, the image file is processed to create a modified image file that is partitioned into various additive segments. As more and more of the segments are added together, a better quality image is created. Thus, for example, a first segment can be used for displaying

the image as a high quality, thumbnail size image or a low quality, feature size image. By combining this segment with another segment, the resulting image can be used as a high quality, feature size image or a low quality, full screen size image.

Preprocessing the image in accordance with the teachings of the Hunt et al. patent effectively offsets the advantages that are otherwise achieved by sending the customized images. In particular, the generation of the custom segments consumes both processing and storage resources at the server, thus minimizing the value of the technique. In addition, the types of client image control data identified in the patent do not afford the user of the client machine sufficient flexibility to control the characteristics of the actual image transferred. The present invention addresses these deficiencies of the prior art.

Specification, page 3, line 24 – page 5, line 4.

Such a characterization is supported by *Hunt*. Specifically, *Hunt* discloses:

Another advantage is that a user has a choice as to the amount of a graphical image file needed depending on an intended use for the image. For example, if images are simply being displayed in a small one inch by one inch arrangement, then only a small amount of the graphical image file need be transmitted. On the other hand, if the image is to be printed with high quality at a page-size, then a substantially larger amount of the graphical image file needs be transmitted (but this is typically still less than the complete graphical image file). In either case, less data is transmitted so less bandwidth is required and transmission time is improved. Further, in the case where the image is to be printed with picture quality on a large format, then a large amount (perhaps all) of data would be transmitted, which is very likely more data than would be conventionally available.

Hunt, col. 3, lines 47-62. Further, *Hunt* discloses:

The modifications 504 to the graphical image file are preferably done in advance and then stored on the server machine 304 in a manner suitable for accessing the graphical image file using the variable or selectable quality versus size tradeoff.

Hunt, col. 8, lines 41-45. As can be seen, *Hunt* teaches that it is preferable to perform the modifications in advance. Thus, *Hunt* teaches away from generating a version of the image in response to a client request.

Further, *Hunt* teaches the following:

FIG. 6A is a representative diagram of a modified image file 600 according to the invention. The modified image file 600 is segmented into a first segment C.sub.1 602, a second segment C.sub.2 604, a third segment C.sub.3 606, a fourth segment C.sub.4 608, and a fifth segment C.sub.5 610. The section 602-610 are preferably encoded using a compression technique such as fractal compression or progressive JPEG. Each of these segments 602-610 contain data associated with the image represented by the graphical image file. However, each of the segments is additive to provide greater image quality but at a cost of larger image file size. The encoding of the segments is such that the first segment C.sub.1 602 can itself be displayed without any of the other segments. Then, for the next gradation in image quality or file size, the graphical image file transmitted would include the first segment C.sub.1 602 and the second segment C.sub.2 604. The third segment C.sub.3 606, the fourth segment C.sub.4 608 and the fifth segment C.sub.5 610 are likewise additive for even greater image quality or file size. For example, in Table 1, the first segment C.sub.1 602 may be 20 KB, and the first segment C.sub.1 602 and the second segment C.sub.2 604 may total to 100 KB. Hence, the first segment C.sub.1 602 can be used for displaying the image as a high quality, thumbnail size image or a low quality, feature size image. The combination of the first segment C.sub.1 602 and the second segment C.sub.2 604 can be used for displaying the image as a high quality, feature size image or a low quality, full screen size image.

The representative diagram of the modified image file 600 illustrated in FIG. 6A is particularly suited for fractal compression or progressive JPEG. However, more generally, the image file can be modified 504 according to the invention using any available compression technique or other file size reduction technique. The invention is flexible enough to be able to use the most appropriate compression or other file size reduction technique for each image, quality and size. The invention can also use different techniques for different parts of an image.

Hunt, col. 8, line 46 – col. 9, line 15. As can be seen, *Hunt* teaches the use of a compression technique, such as a fractal, compression, or progressive JPEG, which allows for different portions of data for an image to be sent.

Although *Hunt* states that any compression technique or file reduction technique may be used, no teaching, suggestion, or incentive is present for performing these techniques in a manner in which a version of the image is created in response to a client request. No such guidance is provided by *Hunt*. In other words, by generating a version of the image in response to receiving the request, the mechanism of the present invention creates this image "on-the-fly" overcoming deficiencies found in *Hunt* with respect to

flexibility to control the characteristics of the image transferred.

In rejecting the claims, the examiner asserts that *Hunt* discloses that the data transmitted from the server to the client is customized using client supplied information. The examiner equates the customization taught by *Hunt* as generating a version of the image, for an image transfer.

The examiner points to the following portions of *Hunt* for these teachings:

> Broadly speaking, the invention relates to techniques for transmitting graphical images in a network environment wherein the amount of data of the graphical images that is transmitted for each of the graphical images is customized in accordance with client and/or server supplied information. The techniques thus enable graphical images to be transmitted more flexibly and efficiently. As a result, the amount of data transmitted is customized for the particular situation. Hence, excess data need not be transmitted when the requester does not need or desire it. Alternatively, a request for a very high quality image can be satisfied.

Hunt, column 2, lines 14-25. This portion of *Hunt,* however, does not teach customizing an image by generating an image. Instead, *Hunt* discloses customizing the amount of data transmitted for a graphical image. Nowhere does *Hunt* teach or suggest that a version of an image is generated in response to receiving a request from the client. As shown above, *Hunt* teaches sending different portions of data for an image to provide different image qualities.

The examiner also points to the following portion of *Hunt* as teaching customization of an image based on a request from a client:

> The server processing 800 begins with a decision 802 that determines whether a graphical image request has been received from a client. When the decision block 802 determines that a graphical image request has not been received, the server processing 800 repeats the decision block 802 until the graphical image request is received. Once the graphical image request is received, the server processing 800 determines 804 whether the customization flag is set at the server. Recall that the server handshake processing 414 sets or resets the customization flag at the server (FIG. 4B). If the customization flag is set, an amount of data and/or image format for the requested image is determined 806. Here, the image that is to be transmitted from the server to the client is customized in accordance with the invention so that the amount of data and/or format are determined in accordance with image control data from the client as well as image control data from the server. Following block 806 or

> following the decision block 804 when the customization flag is not set, the image data is sent 808 to the client. Thus, when both client and server support customization of the amount and/or format of the image data, then customization is performed prior to transmission; otherwise, when customization is not supported the image data is sent as is without customization.

Hunt, column 9, line 59-column 10, line 15. This portion of *Hunt* teaches that customization occurs, but no teaching, suggestion, or incentive is found in this portion for generating a version of an image. This portion of *Hunt* cannot be considered in isolation without considering other portions of this cited reference. When *Hunt* is considered as a whole by one of ordinary skill in the art, this customization of the image with respect to the amount of data sent with the image in which different quality levels of the image may be based on the amount of data sent.

For example, *Hunt* teaches:

> Techniques for transmitting graphical images in a network environment are described. According to the techniques, the amount of data of the graphical images that is transmitted is customized in accordance with client and/or server supplied information. The techniques enable graphical images to be transmitted more efficiently than previously possible, thus saving precious network bandwidth and reducing transmission time. The invention is particularly suitable for network (intranet or Internet) implementations wherein graphical images often need to be transferred.

Hunt, Abstract.

> FIGS. 6B and 6C are bar charts illustrating amount of data as a percentage of the total amount of available data (e.g., image files size). FIG. 6B illustrates an example of the image customization with respect to different client transmission (modem) speeds. FIG. 6C illustrates an example of the image customization with respect to different intended uses for the requested image. Notice in either of these two examples the amount of data, i.e., the customization, depends on the transmission speed or the intended use. The segments of the modified image file 600 can be used to provide the different amounts of data in an incremental fashion.

Hunt, column 9, lines 16-27. As can be seen, when other portions of *Hunt* are considered, by one of ordinary skill or art, *Hunt* is directed towards a technique for transmitting an image to a client by customizing the amount of data transmitted to

provide for different quality images. Therefore, when the section of *Hunt* cited by the examiner is considered by one of ordinary skill in the art with the other portions of this reference, *Hunt* provides no teaching, or incentive for generating a version of an image in response to a request from a client. Instead, *Hunt* uses a pre-generated image and sends different amounts of data for that image in response to a client request.

In addition, the examiner has admitted that *Hunt* fails to teach the feature of having the image of the version generated to conform to a set of specified bitmap characteristics. The examiner has asserted that the basis for adding such a feature to *Hunt* would have been obvious. The rationale given is constructed by the examiner without the examiner pointing to any teaching, suggestion, or incentive in the prior art as to any basis for this reason. If the examiner is asserting that such a rationale would be well known to one of ordinary skill in the art under M.P.E.P. § 2144.03, applicants have challenged this assertion and have requested that the examiner provide the evidence necessary to show that such a change would be well known or obvious. No such evidence has been provided. The examiner has merely made a modification to *Hunt* without any basis in the prior art and has failed to establish a *prima facie* case of obviousness.

If the examiner is basing the rejection on personal knowledge, applicants have respectfully requested that the examiner provide an appropriate affidavit such that the applicants may review the affidavit and provide responding affidavits to contradict or explain if appropriate. No such affidavit has been provided. Therefore, even though *Hunt* could be modified to include this feature, one of ordinary skill in the art would not make this modification, unless some teaching, suggestion, or incentive is present for it. The only incentive provided is that of the examiner, without pointing to where in the art one of ordinary skill in the art would have specifically considered specifying a number of bits per pixel with respect to the invention disclosed by *Hunt*. As a result, the presently claimed invention patentable over *Hunt* for the same reasons. Further, these dependent claims teach other features not taught or suggested by the cited reference.

Therefore, the rejection of claims 1-6, 10-14, and 27 under 35 U.S.C. § 103 has been overcome.

II. 35 U.S.C. § 103, Obviousness, Claims 6 and 7

The examiner has rejected claims 6 and 7 under 35 U.S.C. § 103 as being unpatentable over *Hunt* as applied to claim 1 above and in further view of Lo et al., United States patent number 5,911,044, ("*Lo*").

The rejection of these claims should be reversed because the independent claims from which these claims depend are patentable over *Hunt*. As a result, combining *Lo* with *Hunt* would not reach the presently claimed invention even if these two references could be properly combined. Further, the claim 6, a representative claim, in this group reads as follows:

> 6. The method as described in Claim 1 wherein the set of bitmap characteristics is specified at the client by setting a graphical control in a graphical user interface.

This feature is one that is distinctly patentable from the features in the claims in Group A.

Further, these two references cannot be combined as proposed by the examiner when the references are considered as a whole. The examiner has recited general features of the references as a reason for combining them. Although both references do transmit over a network, one of ordinary skill in the art would not look to these references and combine them when they are considered as a whole. The mere fact that both references transmit images over a network is insufficient as a reason to combine them. Such a reason is a generalization and is similar to the fact that most computers process data. Such a rationale would be insufficient to combine references because such a reason is also a broad generalization. When these references are considered as a whole, they are directed towards different problems and different solutions.

For example, *Lo* teaches the following problem:

> With the increasing familiarity of business people with computers, more computer based tasks are being performed by more people in office environments. Image scanners are becoming a more popular device in office environments both for enabling images to be included into documents and also to obtain images of documents in order to perform optical character recognition.
>
> Heavy users of scanning devices usually have the luxury of ready access to a scanner. However, many people who use image scanners on an infrequent basis do not have the luxury of being able to directly scan an image into an application program running on their own computer. In the situation where the user does not

have his own scanner, the user must go to a scanner and generate a file containing the image. This image file can then be copied to a floppy disk and walked to the user's computer. The user's computer then reads this disk in order to process the image file. However, depending on the resolution of the scanned image, the image file may be extremely large, thus making it inconvenient for the user to copy the image file to a floppy disk and then transfer the image file on the floppy disk to the user's computer.

In an attempt to overcome this "sneaker network" concept of transferring images in which the user must physically carry the image on a storage medium from one computer to another, Hewlett-Packard has developed the HP Scanjet 4si which allows a scanner to obtain an image file and the image file is subsequently written to a network file server. The image is stored on the file server, for example in a computer mailbox. After the image file is stored on the file server, the file can be retrieved and transferred over a computer network to the local hard disk or other storage device within the user's computer, referred to as a client computer.

Disadvantages of this conventional system include the need of a separate file server and an intermediate storage of the file on the file server which is different from the final destination of the file. Further, there is no direct control of the scanner by the client computer nor can an application directly input the image file from the scanner. Therefore, conventional solutions to sharing a scanner among a plurality of users have their drawbacks and are not very convenient for the users of the shared scanner.

Lo, column 1, lines 26-67. As can be seen, *Lo* is directed towards problems associated with scanners being located at remote systems and how images may be created from a scanner from a remote system and transferred to a destination system.

In contrast, *Hunt* is directed towards a different problem, which is concerned with efficient transmission of images to different clients in which those different clients may use different formats or different capabilities. *Hunt* teaches the following:

One major problem, however, with down-loading graphical image files from the Internet is bandwidth constraints. Due to the large file size of graphical image files, a high bandwidth is needed for transmission of graphical image files in acceptable amounts of time. The bandwidth constraints are primarily due to how user's computers connect to the Internet. Computers are typically connected to the Internet using modems and standard telephone lines. Some users are fortunate enough to couple to the Internet with high speed connections (e.g., T1, T3 or ISDN lines). In any case, most users are connected to the Internet through 14.4 kbits/second or 28.8 kbits/second modems which are relatively slow and therefore a bandwidth constraint for down-loading sizable graphical image files. Hence, the average time it takes to down-load a graphical image file to a user's computer is unduly long. Thus, the communication links by which user's

computers connect to the Internet are the transmission bottleneck.

> Compression techniques can be used to provide some relief to the transmission bottleneck. By compressing the graphical image files using known compression techniques (such as JPEG), the graphical image file can be reduced in size. However, the reduction in size provided by compression does lead to distortion. The amount (or rate) of compression an image can withstand before showing noticeable distortion depends of the image and the viewing medium, but a nominal amount would be 15-to-1 compression. Although a limited amount of compression is acceptable, there is a limit as to the compression rate that still produces acceptable quality. The amount of compression achieved by existing compression techniques does not provide both high quality and rapid transmission over modem connections. The author of an image who prepares a graphical image file for the image that is to be accessed through a network must choose a level of compression to achieve a tradeoff between image quality and transmission time. Consequently, compression helps with the bandwidth constraints or transmission bottleneck, but does not sufficiently solve the problem.
>
> The transmission of graphical image files in networks within companies (intranet) face similar problems. While some users may have high speed connections to servers on the intranet, other users have much slower modem connections. However, both types of users need to obtain graphical image files with acceptable response times. Hence, in the intranet case, the communication links by which user's computers connect to the intranet are also the transmission bottleneck.
>
> Thus, there is a need for improved techniques for transmission of graphical image files in a network environment so that the available bandwidth is used more efficiently.

Hunt, column 1, line 30-column 2, line 12. This portion of *Hunt* specifically deals with problems associated with transferring image files, such as bandwidth constraints. *Hunt* recognizes that different clients may have different capabilities with respect to connections to retrieve files.

Thus, *Lo* is directed towards problems with users not having direct access to a scanner, while *Hunt* is directed towards problems with different capabilities at different clients for retrieving image files. Therefore, one of ordinary skill in the art would not be motivated to combine these references in considering the problems solved as part of considering these references as a whole.

Further, the solutions presented are entirely different. *Lo* teaches the following solution:

> Accordingly, it is an object of this invention to provide a network scanning system which allows the transfer of image information from a scanner to a client

computer over a computer network. It is a further object of the invention to provide a network scanning system which allows the transfer of image information from a scanner to a local computer without the need to first store the image on a network file server.

It is another object of the invention to provide a network scanning system which allows an application program running on a client computer to control and receive information from an image scanner over a computer network, in a manner which is similar to having the scanner directly connected to the client computer.

It is still another object of the invention to provide a network image scanning system which allows an image file to be transferred from a scanner server having the scanner connected thereto to the client computer, without having the image file stored on a separate file server.

These and other objects are accomplished by a network image scanning system which includes a client computer and a scanner server computer connected by a network, the server computer having the scanner connected thereto. According to a first aspect of the invention, a virtual TWAIN driver is utilized by an application-program running in the client computer. The virtual TWAIN driver allows the application program to act, to a certain extent, as if the client computer is directly connected to an image scanner, even though the scanner is connected to a scanner server, the scanner server being connected to the client computer over a computer network. The virtual TWAIN driver interfaces with a client protocol encoder/decoder within the client computer. Commands and information are communicated over the computer network between the client and scanner server.

Lo column 2, lines 3-37. As can be seen, *Lo* is directed towards allowing an image file to be transferred from a scanner server having a scanner to a client without having the image file stored on a separate file server. In contrast, *Hunt* teaches the following solution:

Broadly speaking, the invention relates to techniques for transmitting graphical images in a network environment wherein the amount of data of the graphical images that is transmitted for each of the graphical images is customized in accordance with client and/or server supplied information. The techniques thus enable graphical images to be transmitted more flexibly and efficiently. As a result, the amount of data transmitted is customized for the particular situation. Hence, excess data need not be transmitted when the requester does not need or desire it. Alternatively, a request for a very high quality image can be satisfied. Accordingly, the invention makes significantly better and more intelligent use of the available bandwidth of the network environment. The invention can be implemented in numerous ways, including as a method, process, system, and a computer readable media.

Hunt column 2, lines 15-25. The solution in *Hunt* is one in which a fractal, compression, or

progressive JPEG is used and portions or all of the data is sent, depending on the request from the client.

Therefore, one of ordinary skill in the art would not be motivated to combine these two references when they are considered as a whole. As a result, a combination of *Hunt* and *Lo* can only be made with an improper use of hindsight, with the use of applicants' invention as a template to piece together features from the prior art. As a result, the rejection of claims 6 and 7 has been overcome.

III. Conclusion

Therefore, in view of the above, applicants respectfully request that the rejection of the claims by the examiner's rejection not be sustained.

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APPENDIX OF CLAIMS

The text of the claims involved in the appeal are:

1. A method in a server for serving an image from the server to a client, comprising the steps of:

receiving a client request from the client, wherein the client request specifies a set of one or more bitmap characteristics for an image transfer, at least one of the bitmap characteristic including a number of bits per pixel;

responsive to the client request, generating a version of the image for the image transfer that conforms to the set of specified bitmap characteristics; and

serving the version of the image back to the client.

2. The method as described in Claim 1 wherein the set of bitmap characteristics includes a bitmap compression format.

3. The method as described in Claim 1 wherein the step of generating the version of the image includes processing the image according to the specified bitmap compression format.

4. The method as described in Claim 2 wherein the bitmap compression format is lossy.

5. The method as described in Claim 2 wherein the bitmap compression format is non-lossy.

6. The method as described in Claim 1 wherein the set of bitmap characteristics is specified at the client by setting a graphical control in a graphical user interface.

7. The method as described in Claim 6 wherein the graphical control is a slider having first and second positions and a plurality of intermediate positions.

8. A method in a server for serving the image from the server to a client, comprising the steps of:

receiving a client request from the client, wherein the client request specifies a set of one or more bitmap characteristics for an image transfer, at least one of the bitmap characteristic including a number of bits per pixel;

responsive to the client request, generating a version of the image for the image transfer that conforms to the set of specified bitmap characteristics; and

serving the version of the image back to the client, wherein the set of bitmap characteristics is specified at the client by setting a graphic control, wherein the graphical control is a slider having first and second positions, and a plurality of intermediate positions and wherein the first position selects a subset of bitmap characteristics for a fastest download and lowest quality version of the image.

9. A method in a server for serving an image from the server to a client, comprising the steps of:

receiving a client request from the client, wherein the client request specifies a set of one or more bitmap characteristics for an image transfer, at least one of the bitmap characteristic including a number of bits per pixel;

responsive to the client request, generating a version of the image for the image transfer that conforms to the set of specified bitmap characteristics; and

serving the version of the image back to the client, wherein the set of bitmap characteristics is specified at the client by setting a graphic control, wherein the graphical control is a slider having first and second positions and a plurality of intermediate positions, and wherein the second position selects a subset of bitmap characteristics for a slowest download and highest quality version of the image.

10. A method for serving an image from a server to a client, comprising the steps of:

storing the image at the server;

at the client, specifying a set of one or more bitmap characteristics for an image transfer, at least one of the bitmap characteristics including a number of bits per pixel;

at the server, responsive to a client request that includes data identifying a specified bitmap characteristic, generating a version of the image that conforms to the specified bitmap characteristic; and

serving the version of the image back to the client.

11. The method as described in Claim 10 wherein the client is a computer having a browser for issuing the client request.

12. The method as described in Claim 10 wherein the bitmap characteristics include a bitmap compression format.

13. The method as described in Claim 10 wherein the bitmap characteristics include a number of dots per inch on a printer associated with the client.

14. The method as described in Claim 10 wherein the image is stored at the server in a high resolution format.

Claims 15-26 (Cancelled).

27. The method as described in Claim 1, wherein the image transfer is for a web page.

28. The method of claim 1, wherein the image is stored in a first file, the generating step comprises:

processing data for the image in the first file to create the version of the image for the image transfer that conforms to the set of specified bitmap characteristics; and

storing data for the version of the image in a second file for transfer to the client, wherein the processing and storing steps are initiated after the client request has been received.

29. Method of claim 28, wherein the processing step transforms the data for the image according to a requested color depth value.